



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 220421-0103]

RTID 0648-XR121

Endangered and Threatened Wildlife; 90-Day Finding on a Petition to List the Tope Shark as Threatened or Endangered Under the Endangered Species Act

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: 90-day petition finding, request for information, and initiation of status review.

SUMMARY: We, NMFS, announce a 90-day finding on a petition under the Endangered Species Act (ESA) to list the tope shark (*Galeorhinus galeus*) as a threatened or endangered species and to designate critical habitat concurrent with the listing. We find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted. Therefore, we are commencing a review of the status of the tope shark to determine whether listing under the ESA is warranted. To support a comprehensive status review, we are soliciting scientific and commercial data regarding this species.

DATES: Scientific and commercial data pertinent to the petitioned action must be received by *[insert date 60 days after date of publication in the **Federal Register**]*.

ADDRESSES: You may submit comments on this document, identified by NOAA-NMFS-2022-0048 by the following method:

- *Electronic Submissions:* Submit all electronic public comments via the Federal eRulemaking Portal. Go to <https://www.regulations.gov> and enter NOAA-NMFS-

2022-0048 in the Search box. Click on the “Comment” icon, complete the required fields, and enter or attach your comments.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.*, name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous).

Interested persons may obtain a copy of the petition online at the NMFS website: <https://www.fisheries.noaa.gov/national/endangered-species-conservation/petitions-awaiting-90-day-findings>.

FOR FURTHER INFORMATION CONTACT: Lisa Manning, NMFS Office of Protected Resources, (301) 427-8466, lisa.manning@noaa.gov.

SUPPLEMENTARY INFORMATION:

Background

On February 15, 2022, we received a petition from the Center for Biological Diversity and Defend Them All Foundation to list the tope shark, *Galeorhinus galeus*, as a threatened or endangered species under the ESA and to designate critical habitat concurrent with the listing. The petition asserts that *G. galeus* is threatened by four of the five ESA section 4(a)(1) factors: (1) present and threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial and recreational purposes; (3) inadequacy of existing regulatory mechanisms; and (4) other natural or manmade factors. In addition to requesting that we analyze whether the tope shark warrants listing based on its status throughout all or a significant portion of its range, the

petition requests that we analyze whether any distinct population segments (DPS) of tope shark warrant listing. The petition also requests that, if we determine the tope shark or any DPSs of tope shark warrant listing as a threatened species, we promulgate a protective regulation under section 4(d) of the ESA, and requests that we promulgate a regulation under section 4(e) of the ESA for species similar in appearance to the tope shark. The petition is available online (see **ADDRESSES**).

ESA Statutory, Regulatory, and Policy Provisions and Evaluation Framework

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and to promptly publish such finding in the **Federal Register** (16 U.S.C. 1533(b)(3)(A)). When it is found that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a “positive 90-day finding”), we are required to promptly commence a review of the status of the species concerned during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the review with a finding as to whether, in fact, the petitioned action is warranted within 12 months of receipt of the petition. Because the finding at the 12-month stage is based on a more thorough review of the available information, as compared to the narrow scope of review at the 90-day stage, a “may be warranted” finding does not prejudice the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include subspecies and any vertebrate DPS that interbreeds when mature (16 U.S.C. 1532(16)). A joint NMFS–U.S. Fish and Wildlife Service (USFWS) (jointly, “the Services”) policy clarifies the Services’ interpretation of DPSs for the purposes of listing,

delisting, and reclassifying a species under the ESA (61 FR 4722; February 7, 1996). A species, subspecies, or DPS is “endangered” if it is in danger of extinction throughout all or a significant portion of its range, and “threatened” if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA sections 3(6) and 3(20), respectively, 16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following five section 4(a)(1) factors: (1) the present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms to address identified threats; (5) or any other natural or manmade factors affecting the species’ existence (16 U.S.C. 1533(a)(1), 50 CFR 424.11(c)).

ESA-implementing regulations issued jointly by NMFS and USFWS (50 CFR 424.14(h)(1)(i)) define “substantial scientific or commercial information” in the context of reviewing a petition to list, delist, or reclassify a species as “credible scientific or commercial information in support of the petition’s claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted.” Conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial information.” In reaching the initial (90-day) finding on the petition, we will consider the information described in sections 50 CFR 424.14(c), (d), and (g) (if applicable).

Our determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted will depend in part on the degree to which the petition includes the following types of information: (1) information on current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2)

identification of the factors under section 4(a)(1) of the ESA that may affect the species and where these factors are acting upon the species; (3) whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the ESA may cause the species to be an endangered species or threatened species (*i.e.*, the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) information on adequacy of regulatory protections and effectiveness of conservation activities by States as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) a complete, balanced representation of the relevant facts, including information that may contradict claims in the petition. See 50 CFR 424.14(d).

If the petitioner provides supplemental information before the initial finding is made and states that it is part of the petition, the new information, along with the previously submitted information, is treated as a new petition that supersedes the original petition, and the statutory timeframes will begin when such supplemental information is received. See 50 CFR 424.14(g).

We may also consider information readily available at the time the determination is made. We are not required to consider any supporting materials cited by the petitioner if the petitioner does not provide electronic or hard copies, to the extent permitted by U.S. copyright law, or appropriate excerpts or quotations from those materials (*e.g.*, publications, maps, reports, letters from authorities). See 50 CFR 424.14(c)(6).

At the 90-day finding stage, we do not conduct additional research, and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioners' sources and characterizations of the information presented if they appear to be based on accepted scientific principles, unless we have specific information in our files that indicates the petition's information is incorrect, unreliable,

obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person conducting an impartial scientific review would conclude it supports the petitioners' assertions. In other words, conclusive information indicating the species may meet the ESA's requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information alone necessitates a negative 90-day finding if a reasonable person conducting an impartial scientific review would conclude that the unknown information itself suggests the species may be at risk of extinction presently or within the foreseeable future.

To make a 90-day finding on a petition to list a species, we first evaluate whether the information presented in the petition, in light of the information readily available in our files, indicates that the petitioned entity constitutes a "species" eligible for listing under the ESA. Next, if we conclude the petition presents substantial scientific or commercial information suggesting that the petitioned entity may constitute a "species," we evaluate whether the information indicates that the species may face an extinction risk such that listing, delisting, or reclassification may be warranted; this may be indicated in information expressly discussing the species' status and trends, or in information describing impacts and threats to the species. We evaluate whether the petition presents any information on specific demographic factors pertinent to evaluating extinction risk for the species (*e.g.*, population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate whether the petition presents information suggesting potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1) of the ESA.

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of factors that could negatively impact a species, do not constitute substantial information indicating that listing may be warranted. We look for information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

Many petitions identify risk classifications made by nongovernmental organizations, such as the International Union on the Conservation of Nature (IUCN), the American Fisheries Society, or NatureServe, as evidence of extinction risk for a species. Risk classifications by other organizations or made under other Federal or state statutes may be informative, but such classification alone may not provide the rationale for a positive 90-day finding under the ESA. For example, as explained by NatureServe, their assessments of a species' conservation status do “not constitute a recommendation by NatureServe for listing under the U.S. Endangered Species Act” because NatureServe assessments “have different criteria, evidence requirements, purposes and taxonomic coverage than government lists of endangered and threatened species, and therefore these two types of lists should not be expected to coincide”

(<https://explorer.natureserve.org/AboutTheData/DataTypes/ConservationStatusCategories>). Additionally, species classifications under IUCN and the ESA are not equivalent; data standards, criteria used to evaluate species, and treatment of uncertainty are also not necessarily the same. Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the standards on extinction risk and impacts or threats discussed above.

Tope Shark Species Description

The tope shark, *G. galeus*, is one of 39 recognized species within the houndshark family, Triakidae, and is known by many other common names, including soupfin shark and school shark. The tope sharks' range includes most oceans, specifically the Northeast, Eastern Central, Southwest and Southeast Atlantic Ocean; the Southwest, Southeast, Western Central, Eastern Central, and Northeast Pacific Ocean; the Mediterranean Sea, and the Eastern Indian Ocean. They can be found in water depths of up to 826 meters, but prefer coastal areas and occur most frequently within depths up to 200 m (Walker *et al.* 2020). Maximum size varies regionally, with maximum lengths of up to about 6 feet (200 cm, (total length) and weights of up to 98.5 pounds 44.7 kg (Walker *et al.* 2020; Florida Museum, Fish Profile 2021). Age at maturity may also vary regionally and has been reported to range from about 10 – 15 years for females and about 12- 17 years for males (Walker *et al.* 2020, COSEWIC 2007). Maximum lifespan is 40 to 60 years, and generation length has been estimated to be 23 to 26.3 years (Walker *et al.* 2020, COSEWIC 2007). Tope sharks reproduce every 1 to 3 years, although a triennial cycle may be more common (Peres and Vooren 1991, Nosal *et al.* 2021). They are ovoviviparous (*i.e.* eggs are fertilized internally and hatch internally, with no placental connection to the mother) and produce litters of 20-35 pups on average after a roughly 12-month gestation period (Walker *et al.* 2017, Nosal *et al.* 2021). The diet is broad, and includes many teleost fishes (*e.g.* herring, sardines, anchovies, hake, cod, salmon, halibut), as well as some invertebrates (*e.g.* squid, octopus, crabs, annelids; Walker 1999; Florida Museum, Fish Profile 2021).

Tope sharks are highly migratory and have been reported to occur in small schools segregated by sex and age. Genetic and tagging data indicate that the species may be structured as six regional populations, delineated generally as Northeast Atlantic (includes the Mediterranean Sea), southern Africa (Namibia to East London, South Africa), Southwest Atlantic (southern Brazil to Patagonia), Northeast Pacific (British

Columbia to Mexico, including the Gulf of California), Southeast Pacific (Ecuador to Chile), and Tasman Sea (Australia and New Zealand; Chabot and Allen 2009, Hernández 2013, Walker *et al.* 2020, Nosal *et al.* 2021).

Analysis of the Petition

The petition addresses a single species, *G. galeaus*; provides the scientific and common names for this species; and clearly indicates the administrative measures being requested. The petition also contains a detailed, narrative justification for the requested listing under the ESA and provides information on the species' taxonomy, geographic distribution, and threats. Global abundance estimates appear to be lacking for this species, but information is provided in the petition and supporting references regarding population status and trends. The petition is accompanied by literature citations and electronic copies of supporting material, including published scientific literature, webpages, and unpublished reports.

In the sections that follow, we provide a synopsis of our analysis of the information provided in the petition and readily available in our files regarding tope shark population status and trends and whether and to what extent factors identified in section 4(a)(1) of the ESA may cause the tope shark to be an endangered species or a threatened species.

Population Status and Trends

The petition presents information and references indicating that the tope shark has declined in most parts of its range, and that these declines have been driven by overharvest for commercial purposes. The tope shark is currently categorized as “critically endangered” on the IUCN Red List based on trend analyses of abundance indices indicating steep declines in many parts of the range (Southwest Atlantic, southern Africa, Australia, and Northeast Atlantic) and an estimated median reduction of 88 percent for the global population over three generations (79 years; Walker *et al.* 2020).

The most recent IUCN assessment by Walker *et al.* (2020) presents the results of separate trend analyses completed using available data from multiple geographic regions of the tope shark's range. For instance, using standardized catch-per-unit-effort (CPUE) data from three fishery-independent survey datasets from the northern (2005–2018) and southern (1997–2016) Celtic Seas ecoregion and the Azores (1990–2015), Walker *et al.* (2020) estimated annual rates of reduction of tope shark in the Northeast Atlantic region of 1.7 percent and an estimated median reduction of 76.6 percent over three generations (79 years). Using limited CPUE data for the Southwest Atlantic (specifically Argentina) from 1992–2015, they estimated annual rates of decline of 5.9 percent and a median reduction of 99.3 percent over three generations. For Australia, Walker *et al.* (2020) used 74 years of stock assessment abundance data, collected from 1927–2000, and estimated annual rates of reduction of 2.8 percent and a median reduction of 90.1 percent over three generation lengths. Although the available data suggest tope sharks in New Zealand and Australia are a single population, Walker *et al.* (2020) also completed a separate trend analysis for New Zealand. Using standardized CPUE data collected from several locations off New Zealand during 1990–2016, they estimated annual rates of decline of 0.5 percent and an estimated median reduction of 29.8 percent over three generations (Walker *et al.* 2020).

A stock assessment has also been completed for tope shark in South Africa, where it remains a commercially targeted species. Using commercial fisheries catch data as well as scientific survey data, the assessment indicated a continuous declining trend in tope shark abundance at a rate of about 2.7 percent per year from 1991 to 2016, and an estimated 85.1 percent decline over three generations (Winker *et al.* 2019). No stock assessments or abundance indices appear to be available for the Northeast Pacific region (COSEWIC 2007, Walker *et al.* 2020).

ESA Section 4(a)(1) Factors

The petition asserts that the tope shark is experiencing threats under section 4(a)(1)(A) of the ESA as a result of habitat degradation and destruction associated with climate change. The petition discusses and provides references regarding direct and indirect climate-change-driven impacts, including physical and chemical changes to ocean habitats (*e.g.* ocean warming, increasing ocean acidity), changes in ocean circulation patterns, declines in primary productivity and upper-level consumers, range shifts for shark species, and negative health consequences for sharks. Available scientific evidence has clearly established that climate change has affected and continues to affect the distributions of many marine species as well as their productivity and phenology (Bindof *et al.* 2019, Morely *et al.* 2018). Experimental results have also revealed that ocean warming and acidification occurring under levels of carbon dioxide projected to occur by the end of this century can impair prey detection (olfaction) and hunting behavior and impact body condition and growth in some shark species (Dixson *et al.* 2015, Pistevos *et al.* 2015, Rosa *et al.* 2017). Although these various climate-change impacts are concerning, the extent to which tope sharks in particular may be threatened by such impacts is not clear based on the information in the petition or otherwise readily available.

The petition also asserts that high voltage undersea cables are degrading ocean habitats used by tope sharks and are contributing to extinction risk for this species. Specific impacts from high voltage undersea cables identified in the petition include interference with tope sharks' navigation, feeding, and predation. However, information to substantiate that tope sharks are being negatively affected by undersea power cables is not provided and appears to be lacking in general.

The petition identifies overutilization for commercial purposes under section 4(a)(1)(B) of the ESA and inadequate management of fisheries under section 4(a)(1)(D) of the ESA as the primary threats to the tope shark. Information in the petition and the

cited references indicate that tope sharks have been fished commercially, typically with gillnets and longlines, throughout most of their range for meat, fins, and livers, which are rich in vitamin A. Demand for the liver oil in particular led to relatively intense commercial harvest of tope sharks during the 1930s and 1940s in several parts of its range, including the Northeast Pacific, Southwest Atlantic, South Africa, Australia, and New Zealand. This period of increased fishing pressure subsided fairly quickly, however, as the demand for shark liver oil declined and, in some locations, as stocks were depleted (COSEWIC 2007, Walker 1999). For example, from 1937- 1949, an estimated 840,000 tope sharks were harvested in the Northeast Pacific for their livers, and the recorded commercial catch declined from a peak of over 4,000 t in 1939 to 287 t by 1944 (Walker 1999, Walker *et al.* 2020). This population is thought to have collapsed as a result of overexploitation, and although it is currently subject to a low level of commercial and recreational fishing in California, its current status is unknown (COSEWIC 2007).

Information presented in the petition and cited references regarding ongoing commercial fishing for and retention of tope sharks in other parts of the range do suggest cause for concern. For instance, in South Africa, results of the fairly recent stock assessment indicate a greater than 99 percent probability that the stock is overfished and subject to overfishing (Winker *et al.* 2019). The recent IUCN assessment by Walker *et al.* (2020), citing a stock assessment for Australia, states that the Australian government has classified the tope shark as overfished and that the current biomass of this stock is below 20 percent of unexploited levels. The petition also notes that for the Northeast Atlantic, the landings limit recommended in 2018 and 2019 (*i.e.*, 376 t) by the International Council for the Exploration of the Sea (ICES) has been exceeded based on the incomplete annual landings reported for tope shark during 2005–2018, which ranged from 542 t to 715 t (Walker *et al.* 2020).

Directed fishing for tope sharks is prohibited in several areas, including the United Kingdom (since 2008, except for rod and reel), Mediterranean (since 2012), and Canada (since 2012). Other management measures in place within some range countries to address both directed and incidental take of tope sharks include limits on retention of bycatch and daily catch limits, seasonal and spatial area closures (*e.g.*, breeding and nursery areas), quotas and limited entry systems, and gear restrictions. Within the United States, Federal protections (*e.g.* the Shark Conservation Act), as well as regulations in individual States regarding possession, sale, and trade of shark fins are being implemented to prevent the practice of shark finning (*i.e.*, removing shark fins and discarding the body at sea). In 2020, the tope shark was also listed on Appendix II of the Convention on Migratory Species of Wild Animals, which does not directly confer protections on the species, but does establish a framework and call upon Parties to develop agreements to conserve the species. Evidence of stock recovery or stabilization following implementation of some of these management measures is noted for at least a few locations, including the Northeast Pacific and Northeast Atlantic (Walker *et al.* 2020); however, the available trend analyses and stock assessments discussed in the petition suggest that existing management measures may be inadequate to prevent population declines throughout most of the range. Recreational catch of tope sharks is also unreported or under-reported, and therefore its impact and any related management measures cannot be fully assessed.

Lastly, the petition asserts that tope sharks are threatened by toxic pollutants in the marine environment, including dichlorodiphenyltrichloroethane (DDT), polychlorinated biphenyls (PCBs), and trace metals (*e.g.* mercury). That sharks bioaccumulate such contaminants has been well documented, and concentrations of various contaminants in sharks have been shown to vary with multiple factors such as diet, length, weight, sex, species, and habitat (Walker 1999, Lyons *et al.* 2013, Kibria and

Haroon 2015). High mercury concentrations in tope sharks in particular led to concerns over human consumption of the meat and consequently impacted demand and affected markets in some locations during and 1970s and 1980s (Walker 1999). The petition states that bioaccumulation of toxic contaminants may have negative health consequences for tope sharks, such as impaired immune function, endocrine disruption, infertility, and birth defects. However, information to indicate whether and how toxic contaminants are negatively affecting tope shark health in particular is not provided and may not be available.

Petition Finding

After reviewing the petition, the literature cited in the petition, and other information readily available in our files, we find there is substantial scientific and commercial information indicating that listing tope sharks under the ESA may be warranted. Therefore, in accordance with section 4(b)(3)(A) of the ESA and NMFS' implementing regulations (50 CFR 424.14(h)(2)), we will commence a status review of this species. During the status review, we will determine whether *G. galeus* is in danger of extinction (endangered) or likely to become so (threatened) throughout all or a significant portion of its range. As the petition did not request that we consider listing any specific DPSs, we will first assess the status of the taxonomic species, and then based on that assessment, consider whether additional analysis of potential DPSs is warranted and appropriate. As required by section 4(b)(3)(B) of the ESA, within 12 months of the receipt of the petition (February 15, 2023), we will make a finding as to whether listing the tope shark (or any DPSs) as an endangered or threatened species is warranted. If listing is warranted, we will publish a proposed rule and solicit public comments before developing and publishing a final rule. If applicable, the request to promulgate regulations under section 4(d) and section 4(e) of the ESA would be considered in accordance with the Administrative Procedure Act (5 U.S.C. 553) and applicable

Departmental regulations, and appropriate action would be taken (50 CFR 424.14(j)).

Information Solicited

To ensure that the status review is based on the best available scientific and commercial data, we are soliciting relevant data and information from interested parties regarding the tope shark. Specifically, we are soliciting information for this species in the following areas:

- (1) Historical and current abundance and population trends throughout its range;
- (2) Historical and current distribution, population structure, and genetic diversity;
- (3) Current condition of its habitat and current and future threats to these habitats;
- (4) Historical and current data on bycatch and retention of tope sharks in industrial, commercial, artisanal, and recreational fisheries throughout its range;
- (5) Data on trade of tope shark and their products, including fins, meat, and liver oil; and
- (6) The effects of other known or potential threats to tope sharks over the short-term or long-term; and
- (7) Management, regulatory, or conservation programs for tope sharks, including mitigation measures related to any known or potential threats to the species within specific range countries.

We request that all data and information be accompanied by supporting documentation such as reprints of pertinent publications or bibliographic references.

Please send any comments in accordance with the instructions provided in the

ADDRESSES section above. We will base our findings on a review of the best scientific and commercial data available, including relevant information received during the public comment period.

References Cited

A complete list of all references cited herein is available upon request (See **FOR FURTHER INFORMATION CONTACT**).

Authority: The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: April 22, 2022.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs,

National Marine Fisheries Service.

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